

In the Claims:

1. (currently amended) An electronic packaging structure comprising:
a chip carrier;
at least two semiconductor devices attached to said chip carrier, where at least one of said at least two semiconductor devices is a lower power density device and at least one of said at least two semiconductor devices is a higher power density device and said lower power density device has a reduced different thickness than said higher power density device;
a heat spreader having a substantially planar surface in thermal contact with said at least two semiconductor devices; and
a thermal adhesive layer in contact with said heat spreader and with said at least two semiconductor devices whereby a semiconductor device requiring a lower thermal resistance has a thinner thermal adhesive layer than a semiconductor device which can tolerate a higher thermal resistance.
2. (original) The packaging structure of claim 1 wherein said chip carrier is a ceramic chip carrier.
3. (original) The packaging structure of claim 1 wherein said chip carrier is an organic chip carrier.

4. (original) The packaging structure of claim 1 wherein said semiconductor devices are selected from the group consisting of integrated circuit chips, capacitors, resistors and thermistors.
5. (original) The packaging structure of claim 1 wherein said heat spreader is comprised of material selected from the group consisting of diamond, Si, SiC, Mo, ceramic and composites containing these materials.
6. (original) The packaging structure of claim 1 wherein said thermal adhesive layer is comprised of a material selected from the group consisting of Ag filled epoxy, filled thermoplastic, filled polymer, filled polymer adhesive, metal and solder.
7. (withdrawn) The packaging structure of claim 1 wherein a different thermal adhesive layer is used for a semiconductor device which has a different thickness.
8. (withdrawn) The packaging structure of claim 1 wherein said at least two semiconductor devices comprise at least one high power density semiconductor device and at least one low power density device and a compliant thermal adhesive layer material is used on said lower power density semiconductor device and a rigid thermal adhesive layer material is used on said high power density device.
9. (original) The packaging structure of claim 1 wherein said heat spreader is the package lid.

10. (currently amended) The packaging structure of claim 1 ~~further comprising a heat sink in thermal contact with said heat spreader~~ wherein said lower power density device is approximately 120 microns thinner than said higher power density device.

11. (currently amended) A method for cooling multiple semiconductor devices with different cooling requirements on a common chip carrier with a common lid or heat spreader comprising the steps of:

providing a chip carrier;

attaching at least two semiconductor devices to said chip carrier, where at least one of said at least two semiconductor devices is a lower power density device and at least one of said at least two semiconductor devices is a higher power density device and said lower power density device has a reduced different thickness than said higher power density device;

placing a heat spreader having a substantially planar surface in thermal contact with said at least two semiconductor devices; and

placing a thermal adhesive layer in contact with said heat spreader and with said at least two semiconductor devices whereby a semiconductor device requiring a lower thermal resistance has a thinner thermal adhesive layer than a semiconductor device which can tolerate a higher thermal resistance.

12. (canceled) The method of claim 1 wherein said chip carrier is a ceramic chip carrier.

13. (canceled) The method of claim 1 wherein said chip carrier is an organic chip carrier.

14. (canceled) The method of claim 1 wherein said semiconductor devices are selected from the group consisting of integrated circuit chips, capacitors, resistors and thermistors.

15. (canceled) The method of claim 1 wherein said heat spreader is comprised of material selected from the group consisting of diamond, Si, SiC, Mo, ceramic, and composites containing these materials.

16. (canceled) The method of claim 1 wherein said thermal adhesive layer is comprised of a material selected from the group consisting of Ag filled epoxy, filled thermoplastic, filled polymer, filled polymer adhesive, metal and solder.

17. (withdrawn) The method of claim 1 wherein a different thermal adhesive layer is used for a different semiconductor device thickness.

18. (withdrawn) The method of claim 1 wherein said at least two semiconductor devices comprise at least one high power density semiconductor device and at least one low power density device and a compliant thermal adhesive layer material is used on said lower power density semiconductor device and a rigid thermal adhesive layer material is used on said high power density device.

19. (canceled) The method of claim 1 wherein said heat spreader is the package lid.

20. (canceled) The method of claim 1 further comprising the step of attaching a heat sink on to said heat spreader.